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# UNITED STATES DEPARTMENT OF AGRICULTURE

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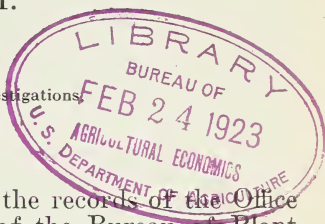
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### HISTORY AND SEED PRODUCTION OF PURPLE VETCH.<sup>1</sup>

ROLAND MCKEE,

Agronomist, Office of Forage-Crop Investigations,  
Bureau of Plant Industry.



The first purple-vetch seed mentioned in the records of the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry, United States Department of Agriculture, was received in November, 1899, from near Naples, Italy, and inventoried as No. 4244. There is no record as to the disposition made of this seed or information showing whether it may have been used in experimental work. A sample of the original seed in the Office of Foreign Seed and Plant Introduction shows that it was true *Vicia atropurpurea*. In December, 1899, seed of a vetch was received under the name *Vicia bengalensis* and inventoried as No. 3954. In November, 1900, another lot of seed was received under the name *Vicia bengalensis* and inventoried as No. 5576. There is no record as to the disposition of the seed of No. 3954, but the seed of No. 5576 was sent to the experiment stations at Berkeley, Calif., and Tucson, Ariz., while some was used in the experimental trials of the United States Department of Agriculture. Plants grown from this seed were identified as *Vicia atropurpurea*, and samples of the original seed show that this identification was correct. From statements in the annual report of the California Agricultural Experiment Station for the years 1897 and 1898, it seems evident that *Vicia atropurpurea* had been grown in that State prior to 1899. On page 224 of that report the statement is made that this species made excellent growth at Berkeley and Paso Robles. There is no mention of the source of the seed used in these trials, but from circumstantial evidence it seems probable that it came from Haage & Schmidt, Erfurt, Germany, through the United States Department of Agriculture.

In 1904 seed was received from C. C. Morse & Co., of Santa Clara, Calif., under the name *Vicia atropurpurea* and was inventoried

<sup>1</sup> The investigational work with purple vetch (*Vicia atropurpurea*) in western Oregon since 1915 has been carried on by the Bureau of Plant Industry in cooperation with the Oregon State Agricultural College and Experiment Station, and credit for the results obtained in that State should be given that institution.

by the Office of Foreign Seed and Plant Introduction as No. 12135. In experimental plantings, however, this seed proved to be *Vicia sativa*. In 1906 seed was received from the University of California under the names *Vicia nissoliana*, *V. atropurpurea*, and *V. lutea*. These lots were inventoried by the Office of Foreign Seed and Plant Introduction as Nos. 18131, 18132, and 18136, respectively. In experimental plantings these all proved to be *V. atropurpurea*. There is no record as to where the University of California secured this seed or how long it may have been under trial. In the same year (1906) seed was received from Haage & Schmidt, of Erfurt, Germany, under the name *V. pseudocracca*. This was inventoried under S. P. I. No. 18820. In experimental plantings this proved to be *V. atropurpurea*. In 1904 seed was received under the name *V. bithynica* and was inventoried by the Office of Foreign Seed and Plant Introduction as No. 11230. The source of this seed is not known. In experimental plantings it proved to be *V. atropurpurea*. Later introductions of *V. atropurpurea* have been made under S. P. I. Nos. 31076 and 31089. These were received as *V. pseudocracca* and *V. onobrychoides*, respectively.

The earliest tests of *Vicia atropurpurea*, so far as the records of the Office of Forage-Crop Investigations are concerned, were made at Arlington, Va., and Pullman, Wash., in 1905. In 1906 the main vetch plantings, including *V. atropurpurea*, were made at Chico, Calif. In the years from 1906 to 1909 the various species of *Vicia* were tested at a number of stations, especially at Chico, and demonstration tests were made in cooperation with a large number of orchardists of southern California, to determine their relative values for green-manuring purposes. In these experiments and demonstrations the superior value of purple vetch was clearly shown. (Fig. 1.)

With the demonstration of the value of purple vetch for green manuring, the establishment of a commercial seed supply seemed desirable. In 1910 experimental demonstrations were undertaken in the Willamette Valley of western Oregon to determine the possibility of growing purple-vetch seed in that locality. Plantings were made at a number of places in the fall of 1910 and the crop was harvested in the summer of 1911. The yields were such as to indicate the possibility of growing the seed on a commercial basis. In the fall of 1911 further plantings were made with the view of increasing the seed stock for additional plantings. The quantity of seed produced by this time had become so large that the few growers had a surplus stock for sale. Every effort was made to induce increased local plantings, but most growers could not be interested in a crop for which there was no standard market. The demand for seed of purple vetch for use in the citrus orchards in California could not be realized by the seed producers of Oregon. The few who had grown purple-vetch seed readily disposed of their surplus crop to California citrus growers and received orders for increased quantities of seed. However, the tendency of the grower was to dispose of practically all the seed produced and only a small quantity was retained for further increase.

At this time (1911-12) efforts were made to induce the California orchardists and seed dealers to enter into contracts with the Oregon growers for the production of purple-vetch seed. This would have

brought the Oregon grower in direct contact with the market for this seed and encouraged further planting. A number of the larger orchardists and seed dealers, as well as the California Fruit Growers' Exchange, were approached in this matter. In the spring of 1914,



FIG. 1.—Stem of purple vetch in flower, with seed pods.

during a trip through southern California, Dr. H. J. Webber, who was in charge of the citrus experiment station at Riverside, Calif., and G. Harold Powell, of Los Angeles, manager of the California Fruit Growers' Exchange, were interviewed. The following para-



graphs from the writer's office report in March, 1914, indicate the situation at that time:

I find the situation regarding purple vetch favorable for its extended use. The high price of other seed, together with the favorable results we have obtained the past winter, make everything in its favor. The results obtained at the citrus station at Riverside place purple vetch at the top of the list of green-maturing crops, and the results of our tests at other places are equally favorable. Doctor Webber is very enthusiastic over the prospects, and after I had talked the matter over with him he wrote a letter to Mr. Powell, stating the favorable results obtained at Riverside and indorsing our idea of the citrus exchange taking up the matter with the Oregon growers, with a view to insuring the production of seed on a permanent basis. \* \* \* I called on Mr. Powell and found him very much interested in the matter. After talking the situation over with him and with Mr. Barnes, who is in charge of the supply division of the citrus exchange, they expressed themselves as very willing and glad to take up the matter with the Oregon growers with a view to purchasing a carload lot, which quantity is perhaps about all that should be used for other than increase this year.

No contracts for the production of this seed were entered into at this time.

The situation continued unchanged for several years, the Oregon growers producing a greater or less quantity of seed which was readily disposed of to California growers, but this total was almost as nothing compared with the quantity desired for green-manuring purposes in California. During the earlier experimental years the production of purple-vetch seed in western Oregon was as follows: 1911, 410 pounds; 1912, 1,300 pounds; 1913, 1,400 pounds; 1914, 12,685 pounds.

In January, 1916, 4 pounds of purple-vetch seed were sent upon request by the Office of Forage-Crop Investigations to N. L. Willet, of Augusta, Ga. Mr. Willet grew this crop for two years and advertised the seed in his catalogue. Apparently the crop did not do sufficiently well in the South to justify him in continuing to handle the seed, as he did not grow it after 1917.

In 1917 E. G. East, of Eureka, Calif., became interested in purple vetch. In that year he received a few seeds from a Mr. Pennywell, of San Francisco, who had been interested in purple vetch from our earlier experiments. In 1918 seed of this crop was furnished to Mr. East by the Office of Forage-Crop Investigations, and he also purchased 500 pounds from the Oregon Agricultural College and 300 pounds from the N. L. Willet Seed Co., of Augusta, Ga. The seed from the Oregon Agricultural College had been grown at that station as a result of cooperative experimental work with the Bureau of Plant Industry. The seed received from Georgia had been grown by Mr. Willet at Augusta from seed supplied through the Office of Forage-Crop Investigations. In the autumn of 1918 Mr. East planted 50 acres, using 16 pounds of seed per acre. The light seedling resulted in a very thin stand, and the following summer about 160 pounds per acre were harvested. According to Mr. East's report, Fred. Wilson, of Hydeville, Calif., planted 1 acre in the fall of 1918, using 100 pounds of seed per acre, and harvested 2,500 pounds in the summer of 1919. In the fall of 1919 about 300 acres were planted in the vicinity of Rohnerville, Calif., about 20 miles east of Eureka, in Humboldt County. These plantings promised in the summer of 1920 a very heavy seed yield, and in fact the seed crop developed sufficiently well to indicate a yield of 1 ton of seed per

acre. Unusually early fall weather, however, prevented the saving of all this seed; it was damaged by rains at thrashing time, and the reported yields ranged from 320 to 1,874 pounds per acre.

The demand for purple-vetch seed by the southern California orchardists became so great, owing to the favorable results of experimental demonstrations and commercial plantings made from Oregon seed, that the supply division of the citrus exchange in 1919 saw fit to act upon our advice of earlier years and attempt to encourage the production of purple-vetch seed by means of contract growing. C. S. Milliken, in charge of the supply division of the California Fruit Growers' Exchange, upon his request, was advised by the Office of Forage-Crop Investigations of the available sources of purple-vetch seed, was given the names of growers who were interested, etc., and made a trip through the vetch-seed producing sections of the Northwest arranging for future contracts for growing this crop. The growers in Humboldt County, Calif., in 1919 contracted with Mr. Milliken to sell their crop at 14½ cents a pound. The Oregon growers entered into similar contracts. In succeeding years and up to the present time the crop is being grown largely under contract, but at a price considerably less than that of 1919. In 1921 about 1,000,000 pounds of purple-vetch seed were produced in northwestern California and about 125,000 pounds in western Oregon.

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